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TECHNICAL REPORT

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CLOTHING ALMANAC FOR SOUTHWEST ASIA

by

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FOREWORD

The revision of this almanac resulted from a visit to these Laboratories on 6 September 1967 by General Theodore J. Conway, Commanding General U. S. Army Strike Command and Commander in Chief, MEAFSA (Middle East/Southern Asia, and Africa south of the Sahara). General Conway said that an updated Clothing Almanac for Southwest Asia was a needed support item for his Command.

The almanac contains a new clothing item nomenclature. Its recommendations are based on longer climatic records and an increased understanding of the causes of, and methods of protection from, heat stress in hot-dry regions.

Appreciation is extended to colleagues in the Clothing and Organic Materials Laboratory, especially Mr. John Slauta, for assistance in the preparation of the report.

This Almanac revises and supersedes Clothing Almanac No. 5 dated July 1951, copies of which should be destroyed.

The work covered in this report was performed under Department of the Army Project 1T025001A129.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

This Clothing Almanac supplements TA 50-902, Clothing and Equipment (Mobilization), dated 3 April 1963. In this report monthly military clothing requirements are given for Southwest Asia, including here the countries of Turkey, Cyprus, Syria, Lebanon, Israel, Jordan, Iraq, Iran, United Arab Republic (east of the Nile River), Saudi Arabia, Yemen, South Yemen, and the Protectorates, Sultanates and Sheikhdoms of the Arabian Peninsula. This region includes portions of Clothing Allowance Zones I, II, and III, which are further divided into mountainous and non-mountainous Clothing Requirement Areas. In general, Zone I comprises the southern and western perimeter of the Arabian Peninsula. Zone II comprises the rest of the Peninsula and the coastal areas of the Mediterranean Sea and Persian Gulf. Zone III includes the northern half of this region. Mountainous areas generally require the use of items listed for the next colder zone, or any additional items required for troop protection. Clothing items are grouped alphabetically in tables for each of the six areas. A map is provided to indicate the extent of each area in Southwest Asia. The Almanac includes a descriptive summary of physical features of this region, its climate, biotic conditions, and the relation of these factors to the issue of special clothing items.

CLOTHING ALMANAC FOR SOUTHWEST ASIA

1. Introduction

a. Purpose

Clothing Almanacs show monthly requirements for items of military clothing to be used in a particular part of the world. They are intended to aid logistic planners by indicating not only the most suitable military clothing for each month, but also the geographical conditions which make such clothing suitable. The tables can be used in planning clothing issue and seasonal clothing renovation, in scheduling warehouse operations to make maximum use of critical space, and in estimating the probable amounts of use and wear of various items and consequent requirements for their replacement. The Almanacs furnish guidance to theater, Army, and other commanders responsible for authorizing the issue of discretionary items; they also provide logistical information for commanders of posts, camps, stations, and divisions or equivalent organizations.

b. Basis of Almanacs

Clothing Almanacs supplement TA 50-902* which specifies the total yearly clothing allowances for each of seven world-wide zones (see Fig. 1). Each Clothing Allowance Zone is based on the average temperatures of the coldest and warmest months, as shown in Table I. For each zone, TA 50-902 lists the items that are required or mandatory. (Mandatory allowances are those minimum items of clothing and equipment which are essential to the health, comfort, and efficient functioning of personnel.) It also lists for each zone the items that are discretionary. (Discretionary items are not required by all personnel within the respective zones, but they are essential to the operating efficiency of certain personnel because of duty assignments which may involve greater exposure to environmental conditions.) Within the framework of TA 50-902, Clothing Almanacs show monthly clothing requirements in specific parts of the world, indicating essential items in both mountainous and non-mountainous areas.

Clothing Almanacs are based on a detailed study of local environmental conditions. Each Almanac specifies the clothing most likely to be needed by troops for adequate protection against these conditions, during round-the-clock operations. Of primary concern in preparing an Almanac is the amount and kind of clothing needed by a soldier in the field while his activity is relatively light. During

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* TA 50-902, Clothing and Equipment (Mobilization), 3 April 1963.

strenuous activity, troops need less clothing; when completely at rest, they require more clothing to remain comfortable. Clothing Almanacs show the items that will give troops adequate protection for at least 90 percent of the time, and in an average year any particular item can be expected to be used at least 30 percent of the time during the months specified.

TABLE I: CLOTHING ALLOWANCE ZONES OF TA 50-902
with Temperature Basis*

Zone		Monthly Mean °F	
		Coldest Month	Warmest Month
I	Warm or hot all year	> 68	> 68
II	Warm or hot summers, mild winters	50 to 68	> 68
III	Warm or hot summers, cool winters	32 to 50	> 68
IV	Mild summers, cool winters	32 to 50	50 to 68
V	Warm or hot summers, cold or very cold winters	< 32	> 68
VI	Mild summers, cold winters	14 to 32	50 to 68
VII	Mild summers, very cold winters	< 14	< 68

* Part 6, para. 1, TA 50-902

c. Designation of Clothing Requirement Areas

Clothing Almanacs are issued for larger countries, subcontinents, and other major parts of the world (e.g., Western Europe, Central Europe, Southeast Asia), which may include parts of two or more TA 50-902 Clothing Allowance Zones (Zone I to VII as defined in Table I, and located in Fig. 1). Each Clothing Almanac delimits a number of Clothing Requirement Areas, according to differences in monthly clothing requirements. Clothing Requirement Areas are of two types: non-mountainous and mountainous.

(1) Non-mountainous Clothing Requirement Areas are designated by the Roman numerals of the world-wide Clothing Zones in which they occur (e.g., Southwest Asia II). Although Clothing Requirement Areas

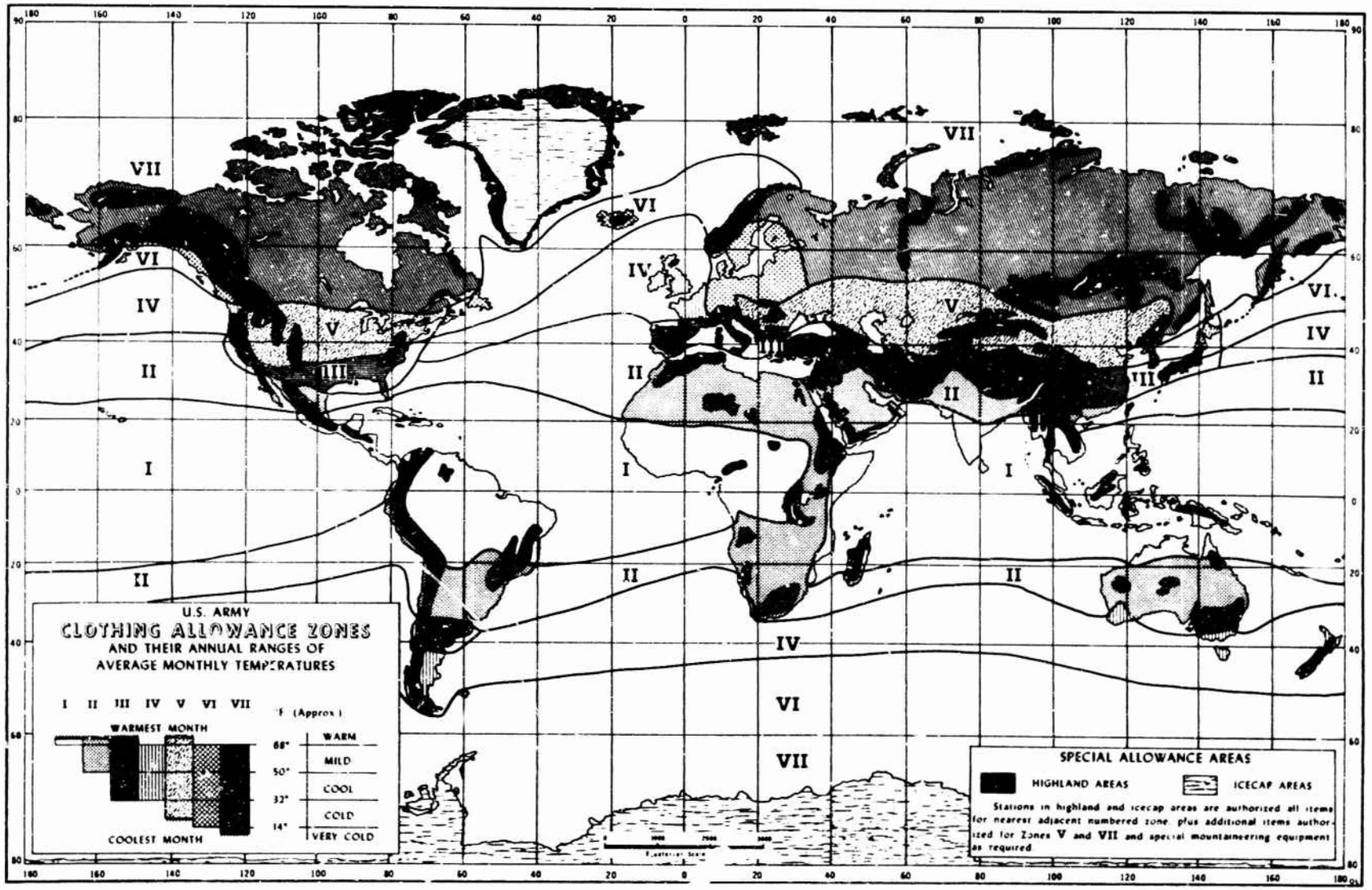

U.S. ARMY
CLOTHING ALLOWANCE ZONES
AND THEIR ANNUAL RANGES OF
AVERAGE MONTHLY TEMPERATURES
I II III IV V VI VII
°F (Approx.)
WARMEST MONTH
COOLEST MONTH
68° WARM
50° MILD
32° COOL
14° COLD
VERY COLD
SPECIAL ALLOWANCE AREAS
HIGHLAND AREAS
ICECAP AREAS
Stations in highland and icecap areas are authorized all items for nearest adjacent numbered zone plus additional items authorized for Zones V and VII and special mountaineering equipment as required.

Figure 1

in different Clothing Almanacs may have identical designations, they do not necessarily have the same environmental conditions or monthly clothing requirements. For example, monthly clothing requirements in Southwest Asia II are not the same as those in Southeast Asia II.

(2) Mountainous Clothing Requirement Areas are identified by an Arabic numeral to indicate that field conditions and consequently clothing requirements may change rapidly within a relatively short horizontal distance (e.g., Southwest Asia 2). In such places, clothing allowances which are adequate for adjacent lowlands may not provide sufficient protection for these diverse highlands; therefore, in these higher or more rugged highlands, commanders may, at their discretion, authorize the clothing allowance of the nearest adjacent area, plus additional items authorized for Zones V and VII, and special mountaineering equipment, as required. Moreover, areas adjacent to the boundary between zones, under special climatic conditions may require the issue of certain clothing and personal equipment items allowed in the colder or warmer zone, as the case may be. In these cases, commanders may authorize discretionary allowances (TA 50-902, part 3, sec. (2)).

In general, individuals in mountainous regions experience lower temperatures as they move poleward at the same elevation. For example, (see Fig. 2) troops stationed in an outpost 3,000 feet above sea level at 15° north latitude would require Zone II clothing items (Clothing Requirement Area 2), while troops operating at the same elevation at 35° north latitude would require Zone III clothing (Clothing Requirement Area 3).

Clothing Requirement Areas in Southwest Asia are shown in Figure 10 located on page 30 of this Almanac. Each area is numbered according to the system outlined above. Broken boundary lines are shown to allow for flexibility of issue where significant local variations in climate are not fully known or are difficult to indicate on maps of the scale used in this almanac.

In this Clothing Almanac for Southwest Asia, 6 Clothing Requirement Areas are distinguished:

I	(Zone I, non-mountainous)
1	(Zone I, mountainous)
II	(Zone II, non-mountainous)
2	(Zone II, mountainous)
III	(Zone III, non-mountainous)
3	(Zone III, mountainous)

For each of the six Clothing Requirement Areas there is a corresponding table located at the end of this Almanac, following

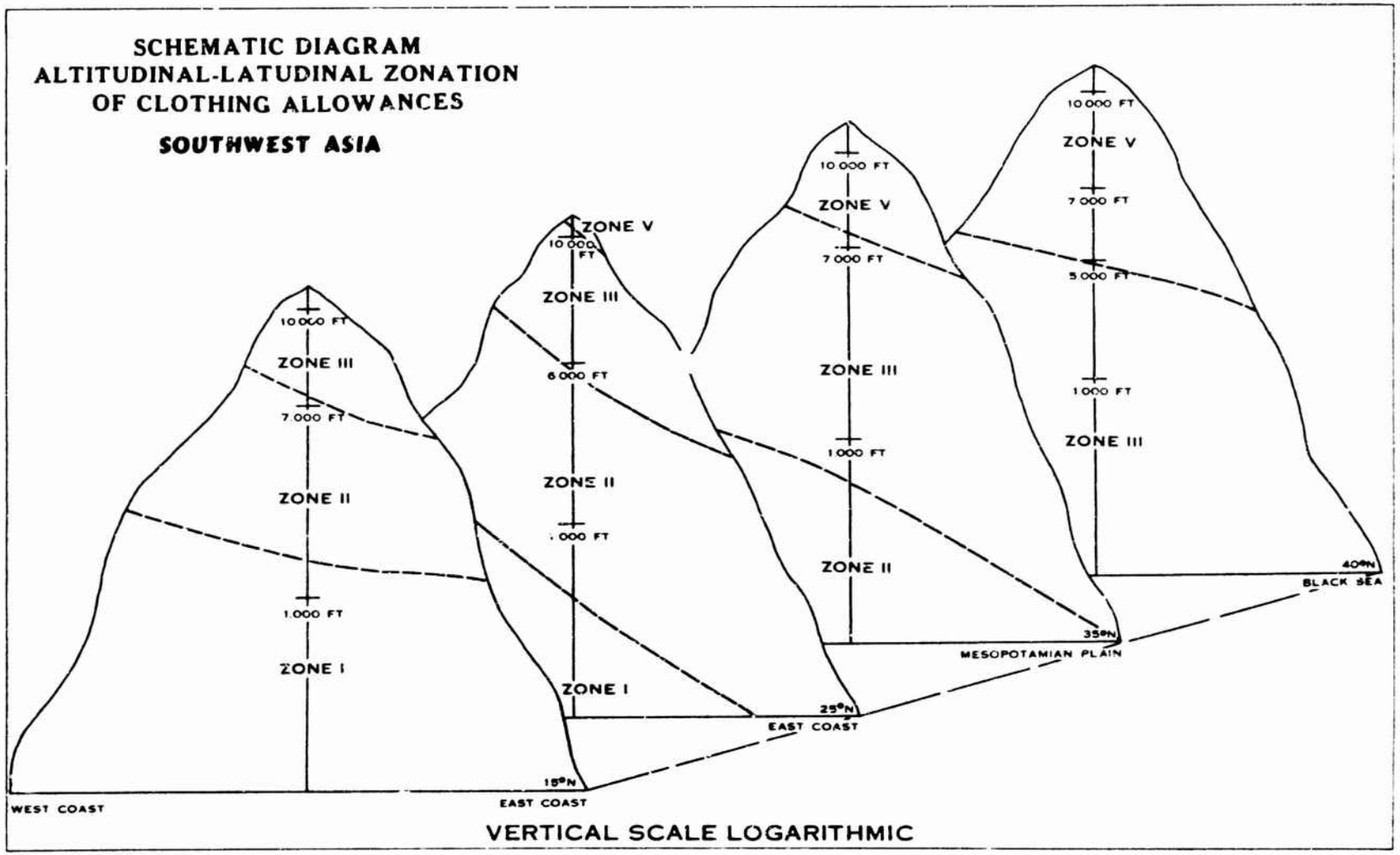

SCHEMATIC DIAGRAM
ALTITUDINAL-LATUDINAL ZONATION
OF CLOTHING ALLOWANCES
SOUTHWEST ASIA
ZONE V
10,000 FT
ZONE III
6,000 FT
ZONE II
1,000 FT
ZONE I
15°N
EAST COAST
10,000 FT
ZONE III
7,000 FT
ZONE II
1,000 FT
ZONE I
WEST COAST
10,000 FT
ZONE V
7,000 FT
ZONE III
1,000 FT
ZONE II
25°N
EAST COAST
10,000 FT
ZONE V
7,000 FT
5,000 FT
1,000 FT
ZONE III
35°N
MESOPOTAMIAN PLAIN
40°N
BLACK SEA
VERTICAL SCALE LOGARITHMIC

Figure 2

Figure 10. On these tables, months are shown along the top, and the clothing items are listed on the left-hand side of the page. Need for an item is shown by a solid bar drawn horizontally opposite the item and in the proper "month" column. The absence of such a bar means that the item is not needed in that month. Clothing items have been grouped and arranged alphabetically in the tables under the headings of Body Clothing, Footgear, Handgear, Headgear, Sleeping Equipment and Other Items. The two categories, Sleeping Equipment and Other Items, contain such individual equipment items which provide environmental protection. Model numbers, shade numbers, etc., have been eliminated for some items to keep the name short. Both mandatory and discretionary items are included in the tables. Discretionary items are indicated by an asterisk (*).

No requirements are shown for specialized equipment which may be authorized by the Commanding General, theater of operations, or by the Department of the Army for individuals undergoing special training, or engaged in special operations. (Boots, ski-mountain, are considered specialized.) Also excluded are certain items in the nature of personal and organizational equipment rather than clothing: insignia, toilet articles, body armor knives, barracks bags, tents, etc.

d. New Items

All items listed in the Clothing Requirements are authorized in TA 50-902 (Mobilization) for the respective zones (e.g., Southwest Asia I, II, and III). As improvements are made, new items are standarized, which automatically replace the older ones in the tables as well as in requisitions. Upon standardization of completely new items, which are not simply improvements but are so different that they can't be compared or related to older items, special instructions for their use will be furnished in an appropriate technical manual or field manual.

e. Clothing Considerations for Desert Conditions

Clothing items of current issue, designed for use in the wet tropics, may not be suitable for use in the dry tropics because of several factors, such as: nature of abrasive terrain, thorny vegetation, camouflage requirements, and extreme high temperatures.

The generally rough, sandy and rocky terrain of the desert requires the use of boots, combat, men's leather black DMS 10½" high. Soles, heels and uppers wear out quickly, and boots will probably have to be replaced more frequently than in non-desert regions.

Likewise, critical clothing points such as knees and elbows will be subject to rapid wear. Also the rotting effect of high concentrations of mineral salts in certain desert soils on clothing and equipment may necessitate frequent replacement.

To protect against radiational heat gain from the sun, especially in the southern Arabian Peninsula, the helmet, sun and the neckerchief, man's cotton knit, used as a neck and shoulder protector, should be worn.

f. Some Physiological Effects of Desert Conditions

Intense heat, bright sunlight and desiccating winds may result in severe sunburn and dry, cracked skin and lips, as well as heat exhaustion or heatstroke. The influence of dryness causes cuts and scratches to become infected easily. Preparations like chap stick to keep the lips moist and soft, and precautions to see that skin is as little exposed as possible, are important. Protective ointments will provide some protection for exposed skin. To prevent the desert version of snow blindness, glasses sun, spectacle should be worn. Blackening the area around the eyes reduces the effects of glare and improves distance vision. Even if the glare does not seem painful, the very high intensity of sunlight (direct and reflected) will cause a deterioration in night vision.

2. Physiographic Regions of Southwest Asia

Although this region represents only a small part of Asia, it amounts to approximately 2.5 million square miles, which is more than three-fourths the area of the 48 conterminous States of the U.S.A. From south to north it extends over 30 degrees of latitude from 12°N to 42°N, or a distance of about 2,000 miles. From the Aegean Sea coast of western Turkey to the eastern border of Iran is approximately 2,200 miles. Most of the region lies north of the Tropic of Cancer (23°27'N) which crosses the middle of Saudi Arabia. The region contains a complex of rugged mountains, broad dry intermontane plateaus, deserts of various kinds, and a small fringe of coastal plain. The pronounced temperature contrast which occurs diurnally in the arid regions often makes necessary an additional layer of clothing at night. In the mountains not only are changes of clothing required for different seasons, but additional clothing is needed because of the typically colder conditions of uplands, due in part to a lowering of air temperature with increasing elevation. Figure 3 shows the major physiographic regions discussed below.

a. Highlands

The highest peak in Southwest Asia is Mt. Demavend (18,934 ft.), a volcanic cone in the Elburz Mountains (Fig. 4) of northern Iran.

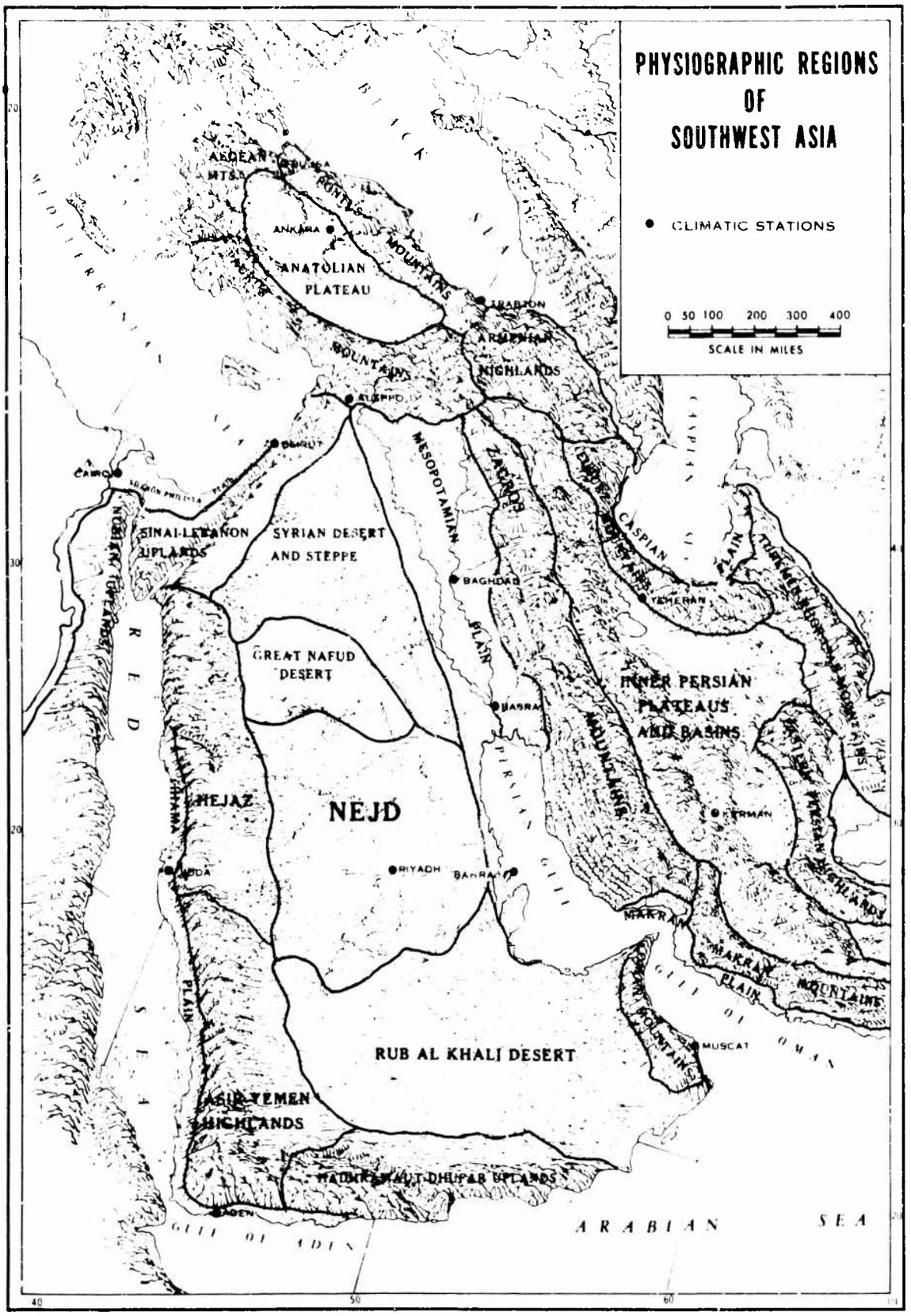

PHYSIOGRAPHIC REGIONS
OF
SOUTHWEST ASIA
CLIMATIC STATIONS
0 50 100 200 300 400
SCALE IN MILES
AEGEAN SEA
MTS.
PONTUS MOUNTAINS
ANKARA
ANATOLIAN PLATEAU
TRABZON
ARMENIAN HIGHLANDS
TAURUS MOUNTAINS
ALEPPO
BEIRUT
CAIRO
NILE DELTA
SINAI-LEBANON UPLANDS
SYRIAN DESERT AND STEPPE
MESOPOTAMIAN PLAIN
ZAGROS MOUNTAINS
CASPIAN SEA
CASPIAN PLAIN
TEHERAN
TURKMEN MOUNTAINS
BAGHDAD
GREAT NAFUD DESERT
INNER PERSIAN PLATEAUS AND BASINS
BASRA
PERSIAN GULF
HEJAZ
NEJD
RIYADH
BAHRAIN
KERMAN
MAKRAN MOUNTAINS
MAKRAN PLAIN
RED SEA
COASTAL PLAIN
MUSCAT
GULF OF OMAN
RUB AL KHALI DESERT
ASIR-YEMEN HIGHLANDS
HADHRAMAUT DHUFAR UPLANDS
ADEN
GULF OF ADEN
ARABIAN SEA

Figure 3

Figure 4. The Elburz Mountains of northern Iran (shown snow-covered here north of Teheran during February) present a narrow but very high barrier to travel.

Snow usually remains all the year only in sheltered hollows and within the crater of this peak. For 200 miles of Caspian Sea borderlands, the Elburz Mountains generally crest at over 10,000 feet. To the north, on the Caspian coast itself, there is a temperate year-round climate with abundant rainfall. The southern slopes of the Elburz are bordered by a desert having frigid winters and hot summers. The lower north-facing slopes of the Elburz have a lush, tropical-like forest. Above this lower forested zone another forest zone of oak, juniper and poplar occurs up to about 8,000 feet. On the upper slopes there is a grassy cover reaching almost to the snow line. Operations at higher elevations in such mountains as the Elburz may require, in addition to cold weather clothing, the use of special climbing equipment, including pitons, climbing rope, snap links, and ice creepers.

The Turkmen-Khorasan Mountains in northeastern Iran are a series of parallel, rounded ridges averaging 6,000 to 9,000 feet in elevation. They rise above the surrounding landscape like a continuous wall. Kuh-i-Binalud, a peak in these mountains, exceeds 11,000 feet. The Turkmen-Khorasan Mountains extend from the Caspian Sea 400 miles southeastward to the border of Afghanistan, forming for half of their distance the Iran-Soviet Union boundary. The valleys of these mountains are fairly heavily populated and cultivated, and produce a large proportion of Iran's wheat.

Kuh-i-Taftan (13,262 ft.), a volcanic cone, is the highest point in the Eastern Persian Highlands near the West Pakistan border. These highlands are a series of essentially parallel but discontinuous ranges with numerous elevations of 7,000 to 9,000 feet. Scrub and camel's thorn bushes grow on lower slopes, with scattered low trees above.

The Makran Mountains, a wilderness of dissected, rugged east-west ridges, flank the southern Iranian coast on the Gulf of Oman for 300 miles. Bare rocks and sand dunes interspersed with date groves characterize the valleys. Peak elevations reach 7,000 feet.

The 1,000-mile-long Zagros Mountains (Fig. 5 & 6) are continuous and rugged, attaining widths of 150 to 200 miles along the whole western side of Iran. Mt. Sardeh (14,920 ft.) is the highest peak, but there are many others between 10,000 and 12,000 feet.

The northwestern extension of the Zagros, covered by recent lava flows, merges with the Armenian Highlands of eastern Turkey and northwestern Iran. Here a series of giant volcanic cones tower above

Figure 5. A treeless, almost uninhabited region of the Zagros in western Iran, through which the Ahwaz-Tcheran railway winds.

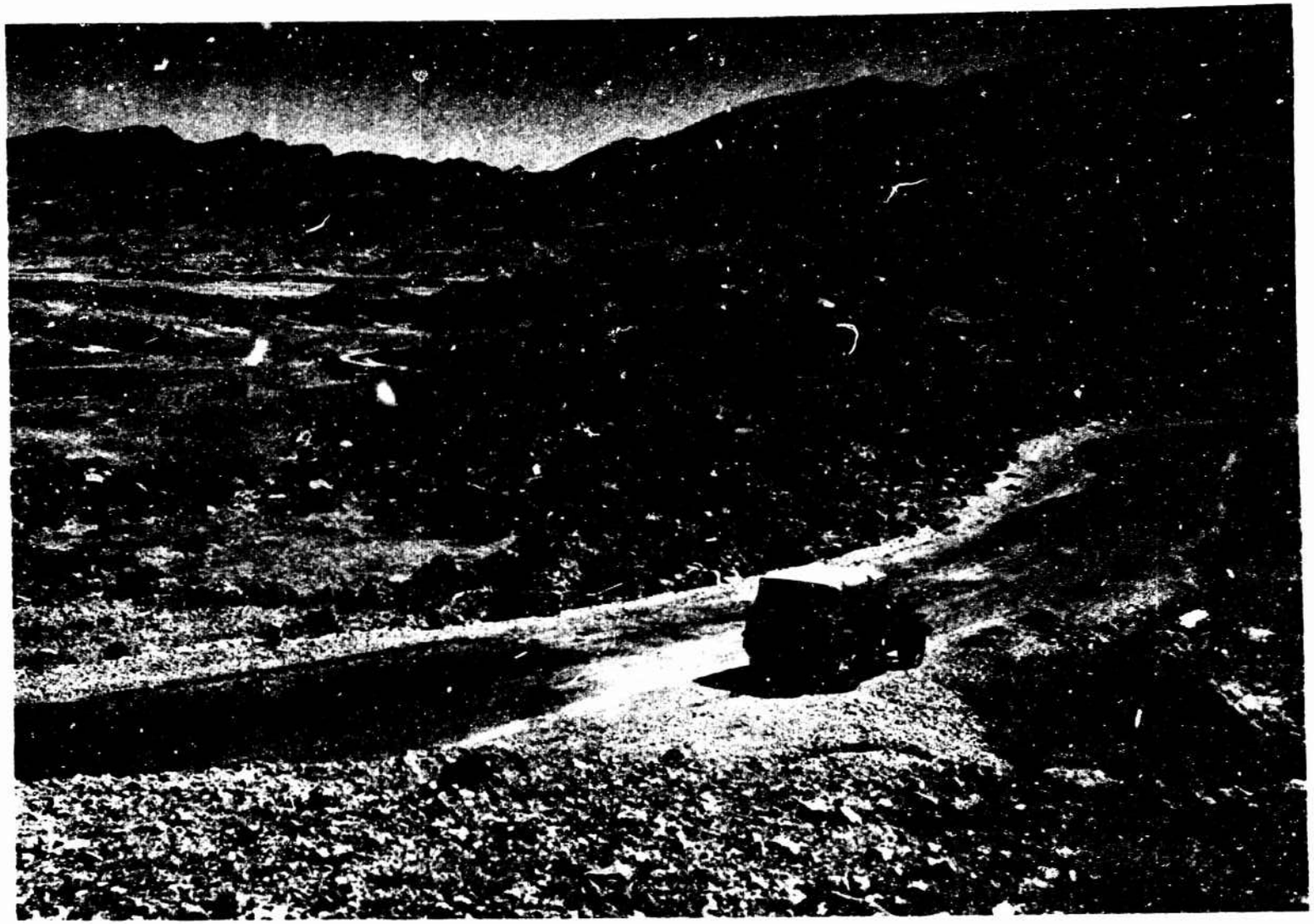


Figure 6. A rocky, barren landscape near Andimeshk in western Iran 150 miles north of head of Persian Gulf suggests a typical scene in southwestern Asia. This region receives less than 10 inches of rain yearly.

the broken plateau surface. Mt. Ararat (16,946 ft.) is the highest cone, and another, Mt. Suphan, reaches 14,550 feet. Vegetation consists mostly of a sparse, scrubby growth at both lower and upper levels, the result of aridity at lower elevations and cold at higher elevations. Forests occur only at intermediate elevations. Most ridges and peaks exceed 6,000 feet. An extreme minimum temperature of -32°F has been recorded in this region at Kars, Turkey (elevation 5,700 ft.).

Elevations in the Pontus Mountains of Turkey rise to 7,500 feet within a few miles of the Black Sea coast. The north-facing slopes are covered with forests of beech and pine.

The Aegean Coastal Mountains section is marked by alternate strips of embayed valleys and low mountains which trend east to west. Most elevations are below 4,000 feet. The higher peaks have humid grasslands near their summits. Poplar and sycamore occur at intermediate levels. Short grass and bush with scattered small trees are found on the drier lowlands.

The Taurus Mountains, consisting of four separate ridges, extend along the Mediterranean south coast of Turkey where they form a very rugged coast line. Peak elevations approach 10,000 feet and deep valleys are prominent.

The island of Cyprus consists of two east-west mountain systems separated by the dry, treeless Mesaoria Plain. Coastal marshes occur at both ends of this plain. The Kyrenia Range, which is a series of narrow, rocky and low (1,000 to 2,000 ft.) parallel ridges, follows the northern coastline for 100 miles. The more extensive and rugged Troodos Massif encompasses most of the southwestern part of the island, and includes the highest peak on Cyprus, Mt. Olympus, at 6,430 ft. Stands of pine, dwarf oak, cypress and cedar cover the lower slopes in the Massif.

The Sinai-Lebanon Uplands (Fig. 7) consist of two roughly parallel ranges of mountains split by a deep linear depression which is occupied in north-south order by the Sea of Galilee, the Jordan River and its valley, the Dead Sea and the Gulf of Aqaba. In the north, steep rocky limestone ridges vary in elevation from 4,500 to 8,000 feet. The highest peak, Kornet es Sauda (10,131 ft.), is near Tripoli. To the south, irregular sandy plateaus grade into a labyrinth of peaks and ridges in the Sinai Peninsula where Mt. Katherina rises to 8,650 feet. Nekhl, in the Sinai at an elevation of 1,300 feet, has a mean daily minimum temperature in January of 33°F. A good portion of the Sinai Peninsula is higher than Nekhl; temperatures below freezing can be anticipated at night during the winter season at elevations above 1,300 feet.

Figure 7. An extensively terraced valley near Beirut. This indicates the type of terrain found in parts of Lebanon.

The Nubian Upland of the eastern United Arab Republic is situated between the Nile River and the Red Sea. The Upland resembles in elevation and structure the southern extent of the Sinai-Lebanon Uplands from which it is separated by the Gulf of Suez. Rugged mountain ranges, with crests 4,500 to 7,000 feet, are fringed on the west by rocky desert plateaus and wide sandy flat-floored wadies (Fig. 8). Grasses and shrubs grow at higher elevations. Gabel Shayib (7,175 ft.) is the highest peak.

The uplands east of the northern half of the Red Sea are known as the Hejaz and consist of a greatly dissected escarpment with general crest levels of 2,000 to 3,000 feet, although peak elevations exceed 8,000 feet. In general, crest elevations decrease toward the south.

The highest mountains (10,000 to 12,000 ft.) of the Arabian Peninsula are found among the ranges of the Asir-Yemen Highlands (Fig. 9) which lie east of the southern half of the Red Sea. The highest peak, Jebel Hadhur Nebi Shi'Aib, located in Yemen, is 12,336 feet high. In their interior the highlands consist of extensive plateaus at around 8,000 to 9,000 feet. Near their outer escarpments, the highlands are broken up into separate dome summits and jagged ranges. At San'a, Yemen (elevation 7,750 ft.), an extreme minimum temperature of 17°F has been recorded.

The southern margin of the Arabian Peninsula is occupied by the Hadramaut-Dhufar Uplands, a much dissected complex of barren mountain table lands. Average elevations of over 7,000 feet in the west decline gradually to 3,000 feet in the east. Heights approaching 10,000 feet occur in the South Yemen section of these uplands.

The Oman Mountains, extending along the western edge of the Gulf of Oman, are for the most part rugged and approach 11,000 feet maximum elevation.

b. Plains

The Caspian Coastal Plain of Iran, 400 miles long, is narrow and backed by the Elburz Mountains. The warm, wet climate, a startling exception in Southwest Asia, supports luxuriant vegetation and rich harvests in this densely settled region (approximately 5 million population). Rice, cotton, tea, and citrus fruits are grown.

The most extensive lowland in Southwest Asia, the Mesopotamian Plain, comprises the flood plains and deltas of the Euphrates and Tigris Rivers. Large irrigated areas, marshes and small forested tracts characterize most of the region. The northern part

Figure 8. A typical sand and rock desert in southern U.A.R. where warm-weather clothing is required throughout the year. Note head and neck covering and thick soles of boots on man in left foreground.

Figure 9. Highland farming area in a valley of the Asir-Yemen Highlands near San'a represents one of the few cultivable regions on the Arabian Peninsula.

grades into rolling steppe lands. In this region particularly, the neckerchief, man's, cotton knit can provide protection against the sun in the day and insects at night while serving as a sweat cloth when needed.

The Nile Valley, a flat flood plain 5-15 miles wide, is in many places on the east bordered by 1,000 foot escarpments of the Nubian Upland. The Nile Delta, a very flat alluvial plain, covers about 15,000 square miles. The irrigated areas of both the Delta and the Valley are subject to flood from August to November and may become quite muddy and marshy. Boots, combat tropical, men's leather and nylon duck DMS are required.

The Makran Coastal Plain on the Gulf of Oman is very low and from 1 to 25 miles wide. Mangrove swamps separate the damp sands near the sea from soft dry sand inland where vegetation is very scanty. Dangerous quicksands called "mins" are formed when the sun dries the surface while the soil below remains semi-liquid.

The Sharon-Philistia Plain, narrow in the north, increasing in width to 100 miles in the South at the Suez Canal, skirts the eastern Mediterranean coast from southern Lebanon through the Sinai Peninsula. The precipitation gradient is from north (Beirut 35") to south (Gaza 14").

The coastal plain of western Saudi Arabia, known as the Tihama, is a sandy waste 30 to 50 miles wide.

c. Intermontane Plateaus

The Anatolian Plateau of interior Turkey is largely a treeless steppe with hot, dry summers and cold, dry winters. One station, Mezere, at 3,500 feet elevation, has recorded an extreme maximum temperature of 100°F, and an extreme minimum of -8°F.

The Inner Persian Plateaus and Basins region occupies almost half of Iran. Great areas of salt or mud flat are segmented locally by low mountains and hills. Travel is extremely difficult both in winter when temporary or playa lakes are formed, and in summer when heat hardens the surface to sharp crusted sheets of salt.

A series of undulating hills (elevation approximately 1,000 ft.) grades eastward from the Sinai-Lebanon Uplands into semi-arid steppe, which merges with vast stretches of gravel and stone in the Syrian Desert and Steppe. Long low ridges and sand dunes alternate with occasional dry wadi-beds and clayey depressions which are filled with water during winter, but are dry in summer.

A broken surface of extensive lava fields, local depressions of sand, and a series of escarpments alternating with curving washes of sand and gravel form the Nejd. This central region of sand dunes and ridges connects two extensive sand-deserts, The Great Nafud in the north, and the Rub al Khali in the south. Both deserts support little vegetation and few inhabitants. The Rub al Khali, or "Empty Quarter", is the second largest sand-desert in the world, covering some 250,000 square miles. In the Rub al Khali, at Ubaila, a 10-day temperature record, taken during July 1954, showed that the temperature reached 120°F on 9 of the 10 days; moreover, on one day the minimum temperature was 100°F. The intense sun of these deserts suggests the need for the helmet, sun in lieu of the helmet liner, at least for the months April through October. The neckerchief, man's, cotton knit may be used with either the sun helmet or the helmet liner to provide additional protection for the neck.

3. Climatic Conditions, Southwest Asia

Climatic conditions in Southwest Asia vary from a Mediterranean-type climate (winter rains and summer droughts) along the Mediterranean coast to varying intensities of aridity over most of the region. The outstanding features of the climate that the soldier must be protected against are heat and drought. Extremely high temperatures of over 100°F are experienced in winter as well as summer in the southern Arabian Peninsula. Temperatures as high as 80°F occur in January as far north as the Caspian and Mediterranean coasts when warm air from the south is drawn into the low pressure systems which pass through the area. The temperature change from winter to summer is rapid, with spring and fall serving only as brief transitional periods. Precipitation in winter, the season of maximum rainfall, is adequate for human needs only in the Mediterranean, Black and Caspian Sea coastal zones, and on the windward slopes of mountains in Turkey and Iran. Summer precipitation occurs principally in the Asir-Yemen Highlands and land bordering the Black and Caspian Seas.

Mild to warm winters are the general rule, although cold temperatures can and do occur almost everywhere, even in Saudi Arabia, due to the sporadic invasion of polar air. The plateaus of Turkey and Iran may have snow cover for considerable periods, and the Elburz Mountains have small glaciers. In these areas, unless proper precautions are taken, prolonged exposure to cold and wet may result in trench foot. Frost is common and snow occasionally occurs as far south as the latitude of Baghdad (33°N) and in the mountains of Sinai-Lebanon, Hejas, Yemen, and Oman. Summers throughout the region are both hot and long. Considerable elevation (Fig. 2) is required to reduce summer temperatures, and

higher latitudes have less mitigating effect than might normally be expected.

Station descriptions (Table II) are included to indicate locations and the variations in altitude typical of Southwest Asia.

a. Wind and Dust

All but the more humid areas of Southwest Asia experience dust storms which, although more frequent in summer, may occur at any time of year. Dust storms are associated with strong, gusty winds blowing over broad, dry land surfaces covered with loose material. Additional reservoirs of this friable surface material may be developed by extensive military operations which destroy anchoring vegetation and the naturally cemented sand surface in desert areas. Places in Iraq and Iran usually experience from 4 to 12 bad dust storms a year and almost every month has days in which the visibility is less than 1 mile. The chief hazards of dust storms are the reduction of visibility, the abrasive, penetrating action on clothing and on moving components of equipment, and the respiratory difficulty occasionally experienced by unsheltered personnel. Troops stationed in or near these areas of blowing dust will require goggles, sun, wind and dust, as partial protection against these wind-borne irritants. Another familiar hot-weather phenomenon is the dust-devil, or rapidly moving spiral of dust, which may occur with light winds at any time of day. Though most of them do no harm, large vortices have been known to carve a way through a camp, leaving a lane in which not a single tent remained standing.

The shammal and the sirocco are seasonal winds. The shammal, a strong, hot, dry wind, blows from the north in the Mesopotamian Plain from June to September. It blows steadily, often 9 days out of 10, although it usually lulls to a breeze at night. Temperatures may occasionally rise to 120°F. Dust storms and haze are common during this period.

The sirocco, a dry, dusty, desert wind originating in the Arabian deserts, blows from the south and southeast in early and late summer. High temperatures, low humidities and occasional gale-force winds and dust storms are typical. As a direct result of the sirocco, annual high temperatures often occur as early as March or as late as October in parts of the Arabian Peninsula. Sirocco-type winds occur over Israel, Jordan, Lebanon, Syria, Iraq, Iran, and the United Arab Republic.

TABLE II

STATIONS USED IN TABLES OF MONTHLY VALUES

Stations	Altitude (ft)	Latitude (N)	Longitude (E)	Record (yrs)*
ADEN (South Yemen)	22	12°50'	45°01'	6
ALEPPO (Syria)	1,280	36°14'	37°20'	8
ANKARA (Turkey)	2,825	39°57'	32°53'	24
BAGHDAD (Iraq)	111	33°20'	44°24'	15
BAHRAIN (Sheikhdom of Bahrain)	18	26°12'	50°30'	16
BASRA (Iraq)	10	30°28'	47°51'	18
BEIRUT (Lebanon)	111	33°54'	35°28'	62
BURSA (Turkey)	528	40°11'	29°05'	18
CAIRO (United Arab Republic)	67	29°52'	31°20'	42
JIDDA (Saudi Arabia)	20	21°28'	39°10'	5
KERMAN (Iran)	6,100	30°21'	57°05'	5
MUSCAT (Sultanate of Muscat & Oman)	15	23°37'	58°35'	23
RIYADH (Saudi Arabia)	1,938	24°39'	46°42'	3
TEHERAN (Iran)	4,002	35°41'	51°25'	22
TRABZON (Turkey)	354	41°00'	39°43'	19

*Length of record quoted for each station is the shortest record used for either temperature or precipitation.

b. Temperature (Tables III and IV)

Mean monthly temperatures for the coldest months in Southwest Asia are 40°F or above except for the mountains and plateaus of Turkey and Iran where they may be below 40°F. Temperatures increase as one goes south in the region. A large seasonal range of temperature, characteristic of continental locations, is pronounced in the north and decreases southward.

Interior stations, notably those in desert areas, experience wide daily fluctuations of temperature with a range of 40 degrees fairly usual. Conversely, coastal stations have the moderating influence of the sea to narrow the fluctuations. These abrupt daily changes of temperature are more significant to the comfort of the soldier than the seasonal changes. When nighttime temperatures are markedly lower than those in daytime, the shirt heat retentive/ moisture resistant pullover, may be required as a sleeping shirt.

As indicated above, interior Turkey and mountainous Iran are the principal areas experiencing sub-freezing temperatures in winter. Even though in winter desert areas of the southern Arabian Peninsula experience temperatures above 100°F, practically all of southwestern Asia can have daily minima of 32°F or lower. The highest mean monthly temperatures occur in the June to August period; the lowest occur in January. During summer maximum temperatures of 100°F or more may be expected in most locations in Southwest Asia. The highest recorded temperatures for Southwest Asia have been in the Mesopotamian Plain section of southwestern Iran. Here, temperatures have reached 129°F in June. A large part of the interior of Saudi Arabia has had absolute maximum temperatures above 120°F. Summer daytime temperatures of over 100°F have been recorded for as many as 90 consecutive days in lowland areas of southern Iran. Under these conditions the surface temperature of the ground can be well above 160°F. Glove shells, leather are necessary for handling objects, especially metal, which have been exposed to the sun for long periods. From May through September in the immediate coastal zones of the Persian Gulf, Arabian Sea, and the Red Sea, temperatures are always above 70°F. The enervating nature of this area requires only the lightest weight Army clothing (warm weather) during this period.

c. Precipitation (Table V)

Annual rainfall in Southwest Asia varies from an occasional trace to over 100 inches. However, a major portion of the region receives less than 10 inches annually, and large areas receive less than 5 inches annually. Only the coastal lands of the Mediterranean, Black and Caspian Seas regularly receive 30 inches or more each year.

TABLE III

MEAN MONTHLY TEMPERATURES (°F)

Stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
ADEN	77	78	81	83	87	91	90	89	90	84	80	78	84
ALEPPO	42	47	52	62	71	79	83	83	77	68	56	46	64
ANKARA	32	34	41	52	61	66	73	73	65	57	47	36	53
BAGHDAD	50	53	60	71	82	89	93	93	87	77	64	53	73
BAHRAIN	61	62	68	76	84	88	91	92	88	82	74	65	78
BASRA	52	57	65	75	86	91	96	97	90	80	68	55	76
BEIRUT	56	57	60	65	71	76	80	82	80	75	67	60	69
BURSA	42	43	47	56	63	71	75	75	69	62	54	46	59
CAIRO	56	59	64	70	77	82	83	83	79	76	68	59	71
JIDDA	75	75	76	81	85	86	88	90	87	84	81	77	82
KERMAN	43	46	52	62	74	83	83	79	72	64	53	44	63
MUSCAT	72	72	78	84	92	94	92	88	88	87	80	74	83
RIYADH	58	61	69	77	86	92	93	91	87	78	70	60	77
TEHERAN	36	41	49	60	70	80	86	84	77	65	53	42	62
TRABZON	45	45	46	52	61	68	73	74	69	64	56	49	59

TABLE IV

MEAN DAILY MAXIMUM AND MEAN DAILY MINIMUM TEMPERATURES (°F)

Stations		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
ADEN	Max	82	83	86	89	93	98	97	96	96	91	86	83	90
	Min	72	73	76	77	81	84	83	82	83	76	73	73	78
ALEPPO		50	56	64	75	85	94	97	97	92	81	67	54	76
		34	37	39	48	56	63	69	69	61	54	45	38	51
ANKARA		39	42	51	63	73	78	86	87	78	69	57	43	64
		24	26	31	40	49	53	59	59	52	44	37	29	42
BAGHDAD		60	64	71	85	97	105	110	110	104	92	77	64	87
		39	42	48	57	67	73	76	76	70	61	51	42	59
BAHRAIN		68	70	75	84	92	96	99	100	96	90	82	71	85
		57	59	63	70	78	82	85	85	81	75	69	60	72
BASRA		64	68	75	85	96	100	104	105	102	94	80	69	87
		45	48	55	63	76	81	81	78	72	64	57	48	64
BEIRUT		62	63	66	72	78	83	87	89	86	81	73	65	75
		51	51	54	58	64	69	73	74	73	69	61	55	63
BURSA		48	50	56	66	73	82	87	87	80	72	62	52	68
		35	36	38	45	53	59	63	63	57	51	46	39	49
CAIRO		65	69	75	83	91	95	96	95	90	86	78	68	83
		47	48	52	57	63	68	70	71	68	65	58	50	60
JIDDA		84	84	85	91	95	97	99	99	96	95	91	86	92
		66	65	67	70	74	75	79	80	77	73	71	67	73
KERMAN		58	60	65	77	91	101	101	98	92	85	73	58	80
		27	31	38	47	56	65	65	59	51	42	33	30	45
MUSCAT		77	77	83	90	98	100	97	92	93	93	86	79	89
		66	67	72	78	86	88	87	84	83	80	73	68	78
RIYADH		70	73	82	89	100	107	107	107	102	94	84	70	90
		46	48	56	64	72	77	78	75	72	61	55	49	63
TEHERAN		45	50	59	71	82	93	99	97	90	76	63	51	73
		27	32	39	49	58	66	72	71	64	53	43	33	51
TRABZON		50	50	52	58	66	73	78	79	74	69	61	54	64
		40	39	40	46	55	62	67	68	63	58	51	43	53

NOTE: Mean daily minimum temperatures are representative of early morning (pre-dawn) conditions; mean daily maximum temperatures are representative of early afternoon (1300-1500 hrs) conditions.

TABLE III

MEAN MONTHLY TEMPERATURES (°F)

Stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
ADEN	77	78	81	83	87	91	90	89	90	84	80	78	84
ALEPPO	42	47	52	62	71	79	83	83	77	68	56	46	64
ANKARA	32	34	41	52	61	66	73	73	65	57	47	36	53
BAGHDAD	50	53	60	71	82	89	93	93	87	77	64	53	73
BAHRAIN	61	62	68	76	84	88	91	92	88	82	74	65	78
BASRA	52	57	65	75	86	91	96	97	90	80	68	55	76
BEIRUT	56	57	60	65	71	76	80	82	80	75	67	60	69
BURSA	42	43	47	56	63	71	75	75	69	62	54	46	59
CAIRO	56	59	64	70	77	82	83	83	79	76	68	59	71
JIDDA	75	75	76	81	85	86	88	90	87	84	81	77	82
KERMAN	43	46	52	62	74	83	83	79	72	64	53	44	63
MUSCAT	72	72	78	84	92	94	92	88	88	87	80	74	83
RIYADH	58	61	69	77	86	92	93	91	87	78	70	60	?
TEHERAN	36	41	49	60	70	80	86	84	77	65	53	42	62
TRABZON	45	45	46	52	61	68	73	74	69	64	56	49	59

TABLE IV

MEAN DAILY MAXIMUM AND MEAN DAILY MINIMUM TEMPERATURES (°F)

Stations		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
	Max	82	83	86	89	93	98	97	96	96	91	86	83	90
ADEN	Min	72	73	76	77	81	84	83	82	83	76	73	73	78
		50	56	64	75	85	94	97	97	92	81	67	54	76
ALEPPO		34	37	39	48	56	63	69	69	61	54	45	38	51
		39	42	51	63	73	78	86	87	78	69	57	43	64
ANKARA		24	26	31	40	49	53	59	59	52	44	37	29	42
		60	64	71	85	97	105	110	110	104	92	77	64	87
BAGHDAD		39	42	48	57	67	73	76	76	70	61	51	42	59
		68	70	75	84	92	96	99	100	96	90	82	71	85
BAHRAIN		57	59	63	70	78	82	85	85	81	75	69	60	72
		64	68	75	85	96	100	104	105	102	94	80	69	87
BASRA		45	48	55	63	76	81	81	78	72	64	57	48	64
		62	63	66	72	78	83	87	89	86	81	73	65	75
BEIRUT		51	51	54	58	64	69	73	74	73	69	61	55	63
		48	50	56	66	73	82	87	87	80	72	62	52	68
BURSA		35	36	38	45	53	59	63	63	57	51	46	39	49
		65	69	75	83	91	95	96	95	90	86	78	68	83
CAIRO		47	48	52	57	63	68	70	71	68	65	58	50	60
		84	84	85	91	95	97	99	99	96	95	91	86	92
JIDDA		66	65	67	70	74	75	79	80	77	73	71	67	73
		58	60	65	77	91	101	101	98	92	85	73	58	80
KERMAN		27	31	38	47	56	65	65	59	51	42	33	30	45
		77	77	83	90	98	100	97	92	93	93	86	79	89
MUSCAT		66	67	72	78	86	88	87	84	83	80	73	68	78
		70	73	82	89	100	107	107	107	102	94	84	70	90
RIYADH		46	48	56	64	72	77	78	75	72	61	55	49	63
		45	50	59	71	82	93	99	97	90	76	63	51	73
TEHERAN		27	32	39	49	58	66	72	71	64	53	43	33	51
		50	50	52	58	66	73	78	79	74	69	61	54	64
TRABZON		40	39	40	46	55	62	67	68	63	58	51	43	53

NOTE: Mean daily minimum temperatures are representative of early morning (pre-dawn) conditions; mean daily maximum temperatures are representative of early afternoon (1300-1500 hrs) conditions.

TABLE V

MEAN MONTHLY PRECIPITATION (INCHES)

Stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr*
ADEN	0.2	<0.1	0.2	<0.1	<0.1	<0.1	0.2	0.1	<0.1	<0.1	<0.1	0.2	0.9
ALEPPO	3.5	2.5	1.5	1.1	0.3	0.1	0.0	<0.1	<0.1	1.0	2.2	3.3	15.5
ANKARA	1.3	1.2	1.3	1.3	1.9	1.0	0.5	0.4	0.7	0.9	1.2	1.9	13.6
BAGHDAD	0.9	1.0	1.1	0.5	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.8	1.0	5.5
BAHRAIN	0.3	0.7	0.5	0.3	<0.1	0.0	0.0	0.0	0.0	0.0	0.7	0.7	3.2
BASRA	1.3	1.2	0.4	0.5	0.1	0.0	0.0	0.0	0.0	0.1	1.1	1.0	5.7
BEIRUT	7.5	6.2	3.7	2.2	0.7	0.1	<0.1	<0.1	0.2	2.0	5.2	7.3	35.1
BURSA	3.5	3.5	2.9	2.4	2.4	1.3	2.0	0.9	1.9	2.4	3.1	3.8	30.1
CAIRO	0.[illegible]	0.2	0.2	0.1	0.1	<0.1	0.0	0.0	<0.1	<0.1	0.1	0.2	1.1
JIDDA	0.2	<0.1	<0.1	<0.1	<0.1	0.0	<0.1	<0.1	<0.1	<0.1	1.0	1.2	2.5
KERMAN	0.5	0.9	0.9	0.7	0.1	0.2	0.0	0.0	<0.1	<0.1	0.5	1.4	5.4
MUSCAT	1.1	0.7	0.4	0.4	<0.1	0.1	<0.1	<0.1	0.0	0.1	0.4	0.7	3.9
RIYADH	0.1	0.8	0.9	1.0	0.4	<0.1	0.0	<0.1	0.0	0.0	<0.1	<0.1	3.2
TEHERAN	1.8	1.5	1.8	1.4	0.5	0.1	0.1	0.1	0.1	0.3	0.8	1.2	9.7
TRABZON	2.8	2.7	2.3	2.2	1.7	1.9	1.8	1.6	2.7	3.2	4.0	3.0	29.9

< = less than

* total of averages

Maximum amounts are received on the Elburz and Pontus where in the foothills, Rize registers an annual average of 105 inches. The precipitation in southwestern Asia decreases toward the south and southeast. Large areas in southern Saudi Arabia and southeastern Iran seldom experience rain. Some stations in the Iranian interior have never reported rain in the summer months. In regions of irregular and little rainfall it is common for the total precipitation of a 24-hour period to exceed the average yearly value for a station. For example, Jidda's annual average of 2.5 inches has been exceeded by one 24-hour total of 5.5 inches.

Snow: Because of the low amounts of precipitation, no deep snow cover occurs anywhere in the region except in the Elburz and Zagros Mountains of Iran, and the mountains of Turkey (Pontus and Taurus). Snow occasionally occurs in the southern highlands of Iran, the Sinai-Lebanon Uplands and the Hejaz, and the mountains of Oman and the high elevations in Yemen. Passes in the northern mountains are often blocked for long periods with heavy snows with depths of 10 to 20 feet. A snow cover, which frequently reaches 6 feet, lasts from late November to late April in the Pontus and Taurus Mountains. Military operations would be handicapped by deep snow in these mountains. For winter operations in these snow areas the following overwhite camouflage ensemble is recommended: Parka, cotton oxford overwhite; Trousers, cotton oxford overwhite; Mitten shells, cotton white; Boots insulated cold weather men's rubber white with release valve.

d. Relative Humidity (Table VI)

Tropical desert air, though characteristically dry, has a large capacity for moisture, thus allowing large daily and seasonal fluctuations in humidity. Daily fluctuations, corresponding inversely to temperature change, occur with morning relative humidities generally higher than afternoon relative humidities. This daily range may be as much as 20% in coastal areas and 40% inland. Seasonal fluctuations result mainly from variation in precipitation. Minimum relative humidities occur in summer, and maximum relative humdities occur in winter, the season of most rainfall. The onset of seasonal winds, i.e., sirocco and shamal, can also cause short-term fluctuations. In Saudi Arabia, a southerly wind, having picked up moisture in crossing the warm Arabian Sea, may produce unusually high relative humidities far into the interior.

Relative humidity, normally low inland, increases toward the coasts where it is high and quite uniform year-round. The immediate coasts of the Caspian and Red Seas and the Persian Gulf experience relative humidities of 80% to 90% at times. This combination of high relative humidities and high temperatures, particularly in the Persian

TABLE VI

MEAN MONTHLY RELATIVE HUMIDITY (%)

Stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
ADEN	71	72	74	75	75	64	63	64	67	68	69	69	69
ALEPPO	81	77	70	65	53	49	50	50	57	68	77	84	65
ANKARA	78	76	67	56	53	49	43	40	47	55	67	79	59
BAGHDAD	68	60	55	49	33	24	22	23	27	36	55	68	43
BAHRAIN	84	87	81	78	70	70	72	75	77	82	81	89	79
BASRA	81	72	65	58	52	49	50	50	52	59	71	81	62
BEIRUT	71	71	71	70	66	64	62	61	61	64	64	70	66
BURSA	76	73	71	69	70	63	58	59	65	71	75	75	69
CAIRO	60	55	50	45	40	44	51	51	58	58	61	62	53
JIDDA	56	52	52	54	53	56	53	55	63	61	57	55	56
KERMAN	63	58	58	49	35	30	34	33	41	47	51	67	47
MUSCAT	68	69	66	60	57	62	74	80	74	63	66	67	67
RIYADH	57	50	51	49	41	39	26	27	33	36	47	64	43
TEHERAN	66	55	48	44	38	26	26	25	28	33	58	70	43
TRABZON	71	73	75	77	80	79	77	76	76	74	74	70	75

NOTE: Mean values for above stations are averages of at least two daily observations, one usually taken about sunrise, and one taken about mid-afternoon. Values for Aleppo, Bursa, Cairo and Trabzon are averages of 24 daily observations.

Gulf, produces extreme conditions of heat stress. Precautions in the way of protective clothing, adequate water consumption, proper diet and regulated physical activity should be taken to prevent heat injury. The only relief comes when offshore winds blow. An anomalous situation exists here, however, in that there is very little rainfall in spite of almost constantly high humidities. At Bahrain on August afternoons, temperatures average between 95 and 100°F, while relative humidities average over 70%. These high humidities at high temperatures cause rapid deterioration of clothing, especially leather in boots, through mold and mildew. Inland from the coast, the air is drier and the intense heat more tolerable, as at Basra, which has afternoon temperatures similar to those at Bahrain, but with relative humidities below 30%.

The low August values of 23% and 27%, at Baghdad and Riyadh respectively, reflect the extremely dry air condition which generally prevails over interior southwestern Asia in the dry season. Personnel in mountains may experience high relative humidities in winter, making the low temperatures seem lower. For example:

Mean Relative Humidity (%)

	Jan.	Aug.
Ankara	78	40
Teheran	66	25

4. Biotic Conditions, Southwest Asia

a. Insects and Similar Pests

Among the various species of mosquitoes and flies are some of the most important vectors (carriers) of insect-borne diseases (Table VII). Anopheline mosquitoes can be found wherever there is a water supply. Breeding habitats exist not only in swampy areas of the few perennial rivers and wadis of the desert, but also in remote villages or oases having irrigation systems, wells, rain-water cisterns or small streams. Mosquitoes avoid places where temperatures are above 86°F, and 104°F temperatures are lethal to them. Temperatures below 60°F inhibit the development of the mosquito parasite (Plasmodium) which is the source of malarial infection. Mosquitoes are not normally found above 6,000 feet in Southwest Asia. Sanitary conditions, primitive by European standards, particularly in the villages and rural areas, promote the development of large fly populations.

Ticks are abundant and widely distributed. Camel ticks are plentiful in Saudi Arabia, Iraq, and Iran. Fleas and mites, associated with rodents and similar animals, are common in urban and port areas.

TABLE VII: SIGNIFICANT INSECTS OF SOUTHWEST ASIA

INSECT	DISEASE CARRIED	REMARKS
Mosquitoes		
Anopheles	Malaria	Species breed in all types of water sources
Aedes	Dengue	City breeder; can carry yellow fever in U.A.R., Iraq, Iran, and South Yemen
Culex	Filariasis Japanese B. encephalitis West Nile virus	
Flies		
Sand fly	Sand fly fever Leishmaniasis	Endemic from May to October (Skin ulcers)
Housefly	Mechanical vector of intestinal, skin and eye diseases	
Horsefly		Bites
Fleas	Plague	Associated with rodents
	Endemic Typhus	In Lebanon, Syria, and Iraq
Ticks	Tick-borne relapsing fever	In Iraq, Syria, Jordan and Iran
	Tick-borne typhus	
	Encephalitis (Russian spring summer type)	
	Rickettsial fevers	
	Tularemia	
Lice		
Body lice	Relapsing fever	
	Epidemic typhus	
Bedbugs	Mechanical vector of many diseases	Common in towns and villages
Mites		Bites; causes skin rash. In Turkey, Syria, and Lebanon

The body louse, perhaps the most common of lice, is capable of transmitting epidemic typhus fever and a form of relapsing fever. The use of delousing powder for both clothing and body is recommended. Other pests include scorpions, centipedes and spiders. Clothing or boots should not be left on the ground at night since scorpions and spiders move about at night and may take shelter in them. The stings of the scorpion and the black spider may produce intense local pain but are not likely to be serious. Protective anti-insect equipment, sprays, and repellents should be available for use in infected areas.

Schistosomiasis (snail fever), an infection caused by a parasitic worm (fluke), is extremely common in Saudi Arabia, Iraq, and Syria. Infection can be contracted from larvae in the water by anyone wading, bathing, drinking from, or washing clothes in, irrigation ditches or other bodies of fresh water. Hookworms and roundworms, both of which usually gain access to the body through ankles and feet of anyone who walks without shoes on ground fertilized with infected human excreta, are widely distributed.

Fungal infections of both scalp (mycoses) and feet (mycetoma) are prevalent among local populations.

Military personnel, disciplined to field conditions and possessing inoculative immunity to the common endemic diseases, are not subject to the same health hazards as civilians in an area. Nonetheless, it is still necessary to practice good preventive medicine in the form of sanitation measures, adequate personal hygiene, and avoidance of native villages.

b. Poisonous Snakes

Several species of poisonous snakes exist in Southwest Asia. Although most species live far removed from settled areas, military personnel may encounter some types in the field. One should be very careful while walking among rocks and brush in the desert, particularly just after sunset.

Two main groups of poisonous snakes are found in the region:

(1) Vipers: all vipers are easily recognized by the broad, flat head, narrow neck and elliptical eye pupils. Considerable variation occurs in general body color and markings. Colors range from grey to olive brown, and markings vary from longitudinal zigzag bands to rows of large spots. They inhabit most of the region except the more remote and barren desert areas of the Arabian Peninsula. Among the vipers, the blunt-nosed vipers normally can be found on upland hills well exposed to the sun, although they also inhabit marshy places.

The sand vipers and horned vipers prefer the plains and rock-sand desert regions. Most species possess a venom of moderate toxicity that produces a great deal of local reaction (swelling, discoloration, dull pain), but seldom results in death.

(2) Sand Rattlesnakes occur in all the deserts from Iran westward to the United Arab Republic. They are mainly nocturnal in habits. Their poison is hemotoxic (blood poisonous). Their bites cause local swelling and incapacitate victims but are not commonly fatal.

Cobras, which are typically banded and spectacled on their hoods, are rare. However, because of their wide habitat range in the southern regions of Asia, and their adaptability to living at sea level as well as in mountains, they should be considered. Although cobras are not usually aggressive and bite only when molested, their venom is dangerously neurotoxic to man (injurious to nervous system).

At least 9 species of poisonous sea snakes are found in the shallow coastal waters of the Persian Gulf. They are especially common in the vicinity of river mouths. They are generally inoffensive and seldom bite except when provoked by rough handling. The only known fatalities occured when they were brought up in nets or caught on hooks by fishermen. They resemble certain eels, with vertically flattened bodies and tails.

If military personnel are supplied with first aid kits and antivenoms, together with proper instruction on new modified treatment of snake bite, the mortality from snake bite should be negligible. Excellent antivenoms for medically important snakes of the area are produced at the Rogoff Medical Research Institute in Petah Tiqva, Israel (near Tel Aviv).

c. Harmful Plants

The term "forest" in the sense of a continuous, dense growth of trees can be applied only to those areas where sufficient precipitation occurs, notably at higher elevations and in a pattern increasing in density northward. The predominant character of the vegetative cover elsewhere is that of low-growing shrubbery, thorn-bearing trees and plants, and prickly or burrbearing grasses, all of which cause accelerated wear on body clothing and footgear. A certain altitudinal zonation in mountainous areas is known as a "thorn cushion zone." The use of glove shells, leather may be required if the plants are to be handled.

Several types of poisonous plants grow in the highlands of Southwest Asia. Both the low cactus-like tree, Euphorbia officinalis, and the oleander, Nerium oleander, exude a sap highly caustic to human skin; blisters result and these may become infected. Care should be taken to prevent bare skin from coming in contact with these plants.

5. Summary of Clothing Requirements

Clothing requirements for Southwest Asia, already discussed in part in the preceding paragraphs, are itemized in detail in the six Clothing Requirements tables. They may be summarized in two groups, each suitable for wear in regions with different ranges of average monthly temperatures:

Warm-or Hot-Weather Clothing: 68°F or higher all year.

Mild or Cool-Winter Supplement: average temperature of coldest month, 68°F down to 32°F.

Summaries of the clothing items for both of the above groups and each category of units (AR 320-5, Dictionary of United States Army Terms), are given in Tables VIII and IX. Category I units operate in the forward portion of the active combat area. Personnel in these units are usually without shelter or means of drying clothing for long periods. The clothing listed includes only the minimum essential items required to protect these troops against environmental conditions. Category II units are found forward of the army rear boundary where housing is usually not provided. These troops must have clothing suitable for 24-hour living outdoors. Category III units are found normally in the communications zone or along lines of communication. This includes units operating at United States air bases. Semipermanent housing is usually provided for these units. Included with Category III troops are unassigned casuals, individuals not in classified units undergoing training, and bulk allotments of personnel in the theater Army Replacement system. The theater commander may reclassify units when they are employed in a manner comparable to organizations in the category of the desired classification (TA 50-902, part 1, para. 2b).

The tables for the six Clothing Requirement Areas of Southwest Asia are located in the back of the Almanac. Areas to which the tables apply are shown on the map preceding the tables (Fig. 10). For most effective use of the tables, especially in electing from them clothing items best suited to the specific location and months of the year, the preceding text may be consulted.

TABLE VIII: WARM OR HOT WEATHER CLOTHING SUMMARY
(Mean monthly temperatures above 68°F all year)

Personnel in Category I and II Units	Wear	Spare
Belt trousers: ctn webbing black 1¼ in.	1	-
Boots cbt: tropical mens lthr and nyl duck DMS	1	1
Buckle: belt trousers brass black	1	-
Cap utility: polyester and rayon OG 106	1	-
Coat mans: ctn wind resistant poplin	1	4
Drawers mens: ctn thigh lgth OG 109	1	4
Poncho: coated nylon twill OG 207	1	-
Shirt sleeping heat ret and moist resist: pullover	1	-
Socks mens: wl cushion sole OG 408 stretch type	1	4
Trousers mens: ctn wind resistant poplin	1	4
Undershirt mans: ctn OG 109 pullover qtr lgth sleeves	1	4
Personnel in Category III Units		
Items listed for Category I and II units above and in addition:		
Boots cbt: mens lthr black DMS 10½ in. high	1	1
Cap gar: wl and polyester AG 344	1	1
Necktie: mans four-in-hand wl tropical black	1	1
Raincoat mans: ctn and nylon oxford AG 274	1	-
Shirt mans: ctn uniform twill khaki shade 1 qtr lgth sleeve	1	1
Trousers mens: ctn uniform twill khaki shade 1	1	2

TABLE IX: MILD OR COOL WINTER SUPPLEMENT SUMMARY
(Mean monthly temperatures 32° to 68°F during coldest month)

Personnel in Category I and II Units	Wear	Spare
Boots cbt: mens lthr black DMS 10½ in. high	1	1
Cap insul: ctn nylon oxford OG 107	1	-
Coat mans: ctn and nylon wind resistant sateen WR OG 107	1	-
Drawers mens: 50 ctn 50 wl knit ankle lgth	1	1
Glove inserts: wl and nylon knit OG 108	1	1
Glove shells: lthr black	1	-
Shirt mans: ctn sateen OG 107	1	1
Shirt mans: wl nylon flannel OG 108	1	1
Suspenders trousers: scissors back type	1	-
*Trousers mens: wl serge OG 108	1	1
Trousers mens: ctn nylon wind resistant sateen WR OG 107	1	1
Undershirt mans: 50 ctn 50 wl full sleeve	1	1
Personnel in Category III Units		
Items listed for Category I and II Units above and in addition:		
Cap gar: wl serge OG 108	1	-
Coat mans: wl serge AG 108	1	-
Trousers mens: wl serge AG 44	1	-

* For operations in mountain areas

All listings in the Clothing Requirements tables, as well as the summary tables, are those authorized by TA 50-902 at the time of preparation of this Almanac. Changes in these lists may be made at any time.

5. Supplementary Department of the Army Publications

FM 21-15 Care and Use of Individual Clothing and Equipment. (Jan 1967)

FM 31-25 Desert Operations. (Jan 1964)

[illegible]-QM-4 Special Forces Clothing and Equipment. (May 1963)

MIL-HDBK 150 Clothing Components for Military Uniforms (TB 700-105, June 1960)

SB 10-523 Size Tariff for Clothing, Equipage, and Footwear. (Jan 1967)

SB 700-20 Adopted Items of Materiel and Army Reportable Items. (Apr 1968)

TA 50-900 Clothing and Equipment. (Peace) draft.

TM 10-228 Fitting of Footwear. (Apr 1956)

TM 10-275 Cold Weather Clothing and Sleeping Equipment. (Oct 1964)

United States Army Display of Combat Clothing and Personal Equipment. NATO. prepared by U.S. Army Natick Laboratories, U. S. Army Materiel Command. 21-24 April 1964, Koblenz, Federal Republic of Germany.

CLOTHING REQUIREMENTS OF SOUTHWEST ASIA

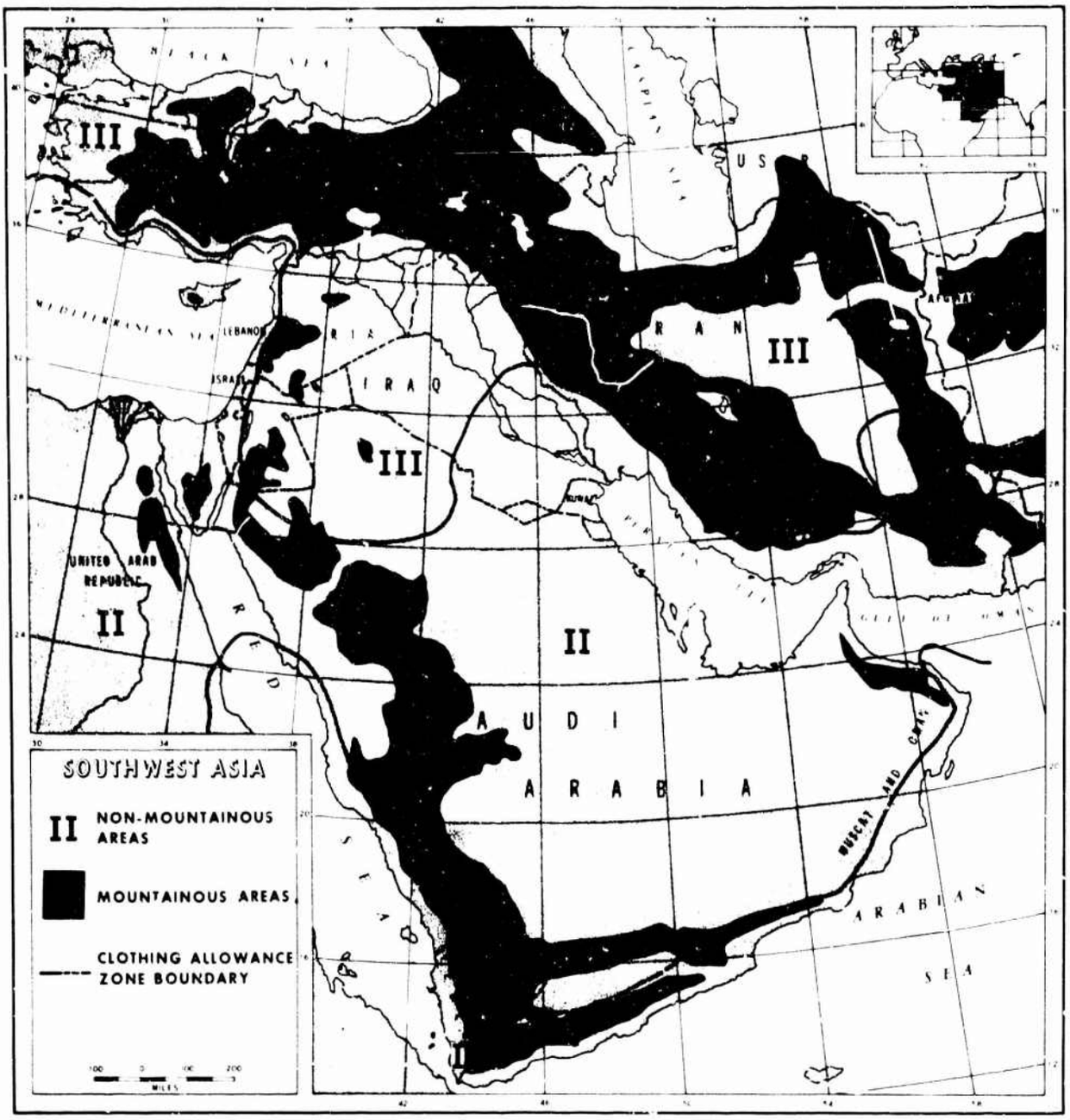


Figure 10

CLOTHING REQUIREMENTS

CLOTHING REQUIREMENTS SOUTHWEST ASIA I (non-mountainous)

CLOTHING REQUIREMENTS SOUTHWEST ASIA 1 (mountainous)

CLOTHING REQUIREMENTS SOUTHWEST ASIA II (non-mountainous)

CLOTHING REQUIREMENTS SOUTHWEST ASIA 2 (mountainous)

CLOTHING REQUIREMENTS SOUTHWEST ASIA III (non-mountainous)

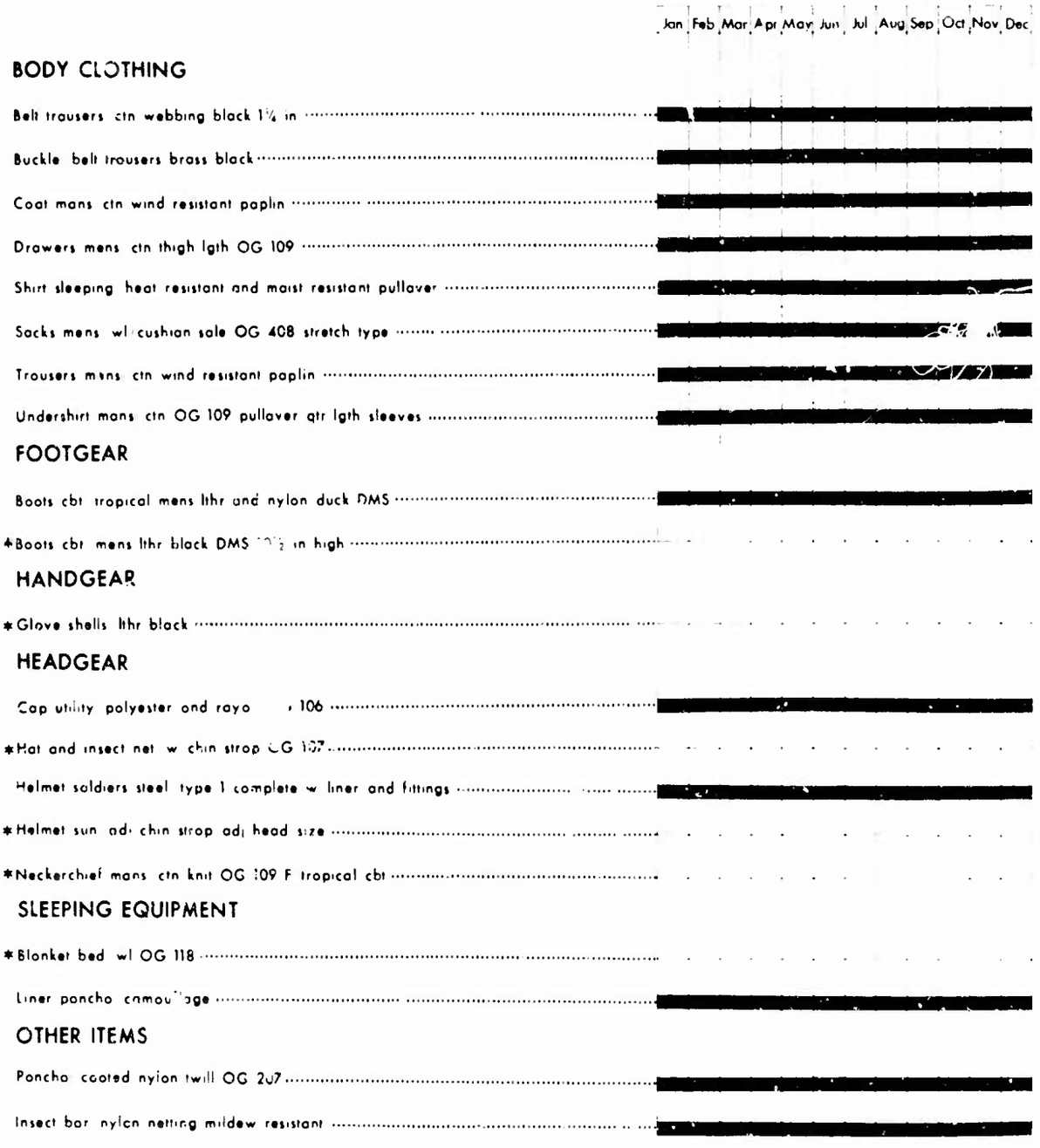
CLOTHING REQUIREMENTS SOUTHWEST ASIA 3 (mountainous)

NOTE: For explanation see section 1. c.

CLOTHING REQUIREMENTS

Southwest Asia I

(Non-Mountainous Area)



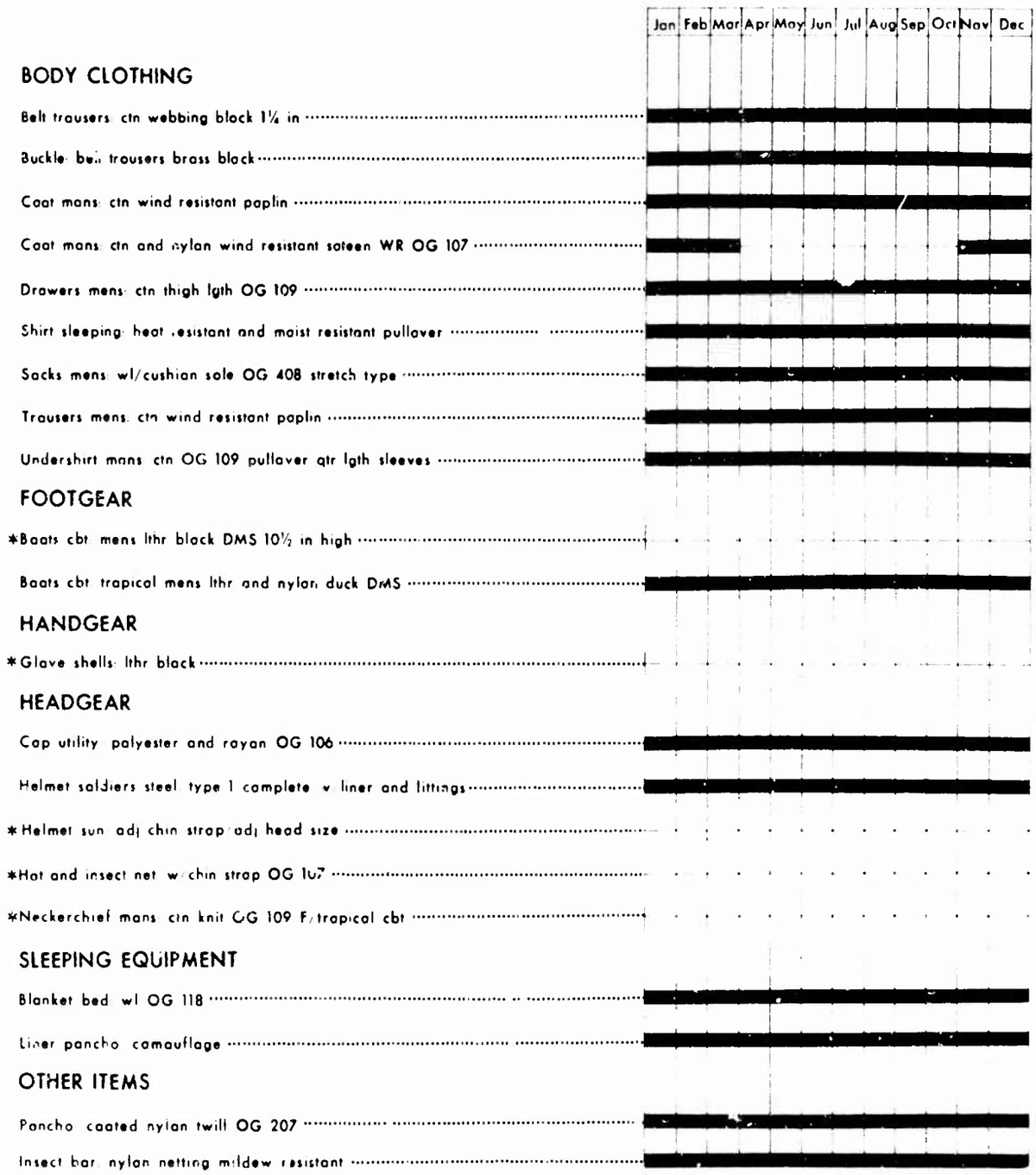
Mandatory item usually needed in this month

* Discretionary item which may be issued instead of or in addition to TA 50-902 zone item

CLOTHING REQUIREMENTS

Southwest Asia 1

(Mountainous Area Of Southwest Asia I)



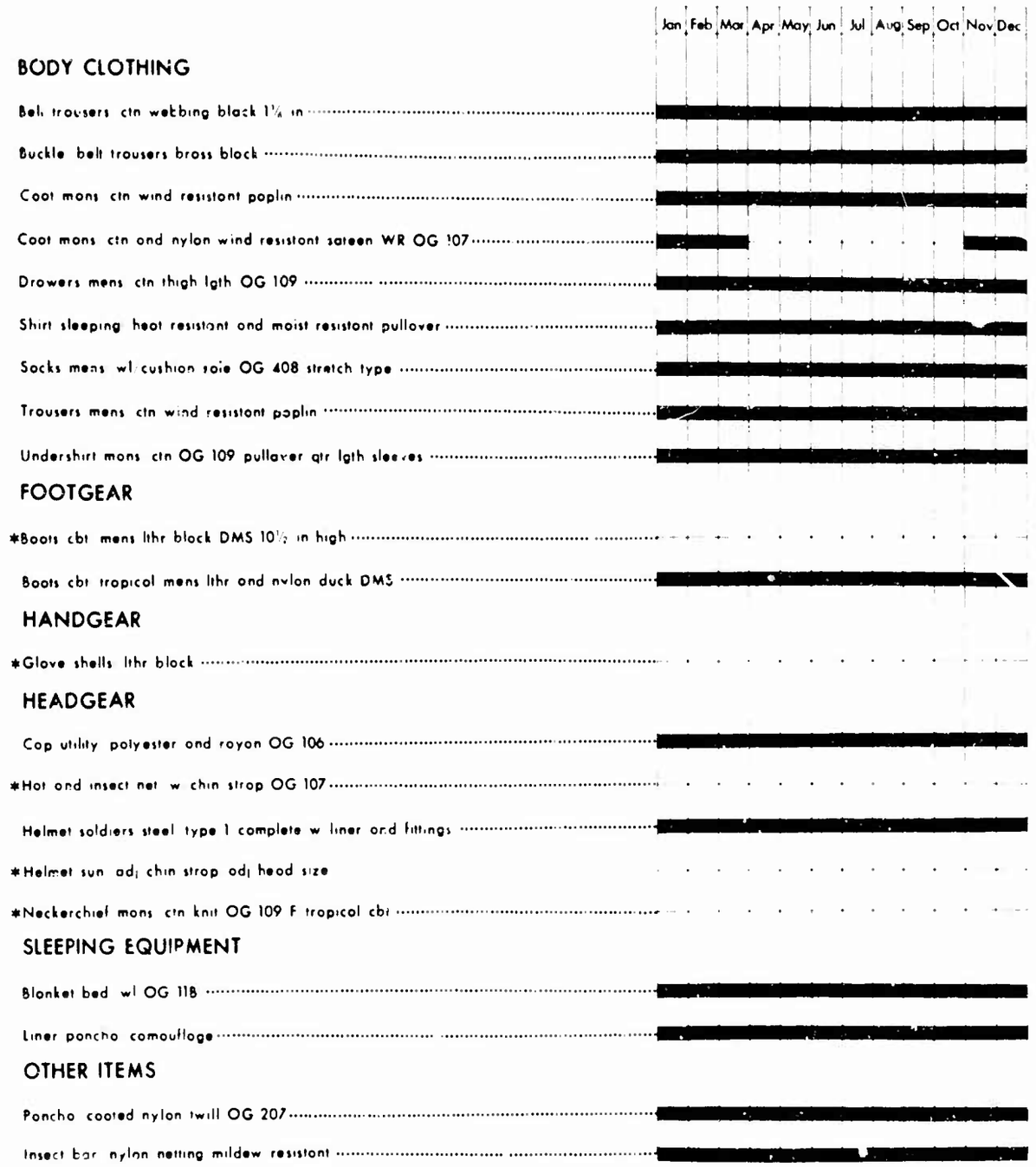
Mandatory item usually needed in this month

* Discretionary item which may be issued instead of or in addition to TA 50 902 zone item

CLOTHING REQUIREMENTS

Southwest Asia II

(Non-Mountainous Area)



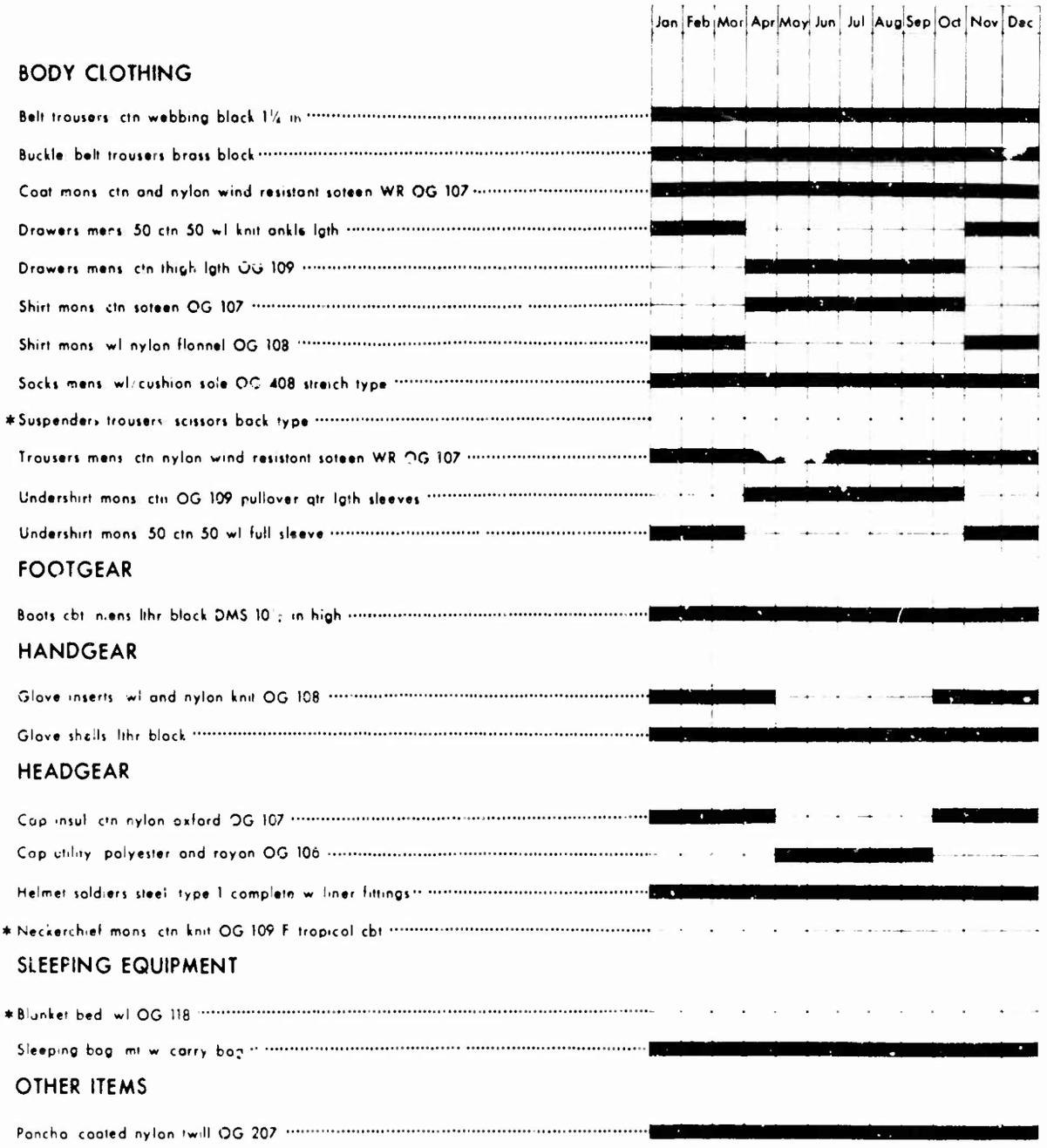
Mandatory item usually needed in this month

* Discretionary item which may be issued instead of or in addition to TA 50 902 zone item

CLOTHING REQUIREMENTS

Southwest Asia 2

(Mountainous Area Of Southwest Asia II)



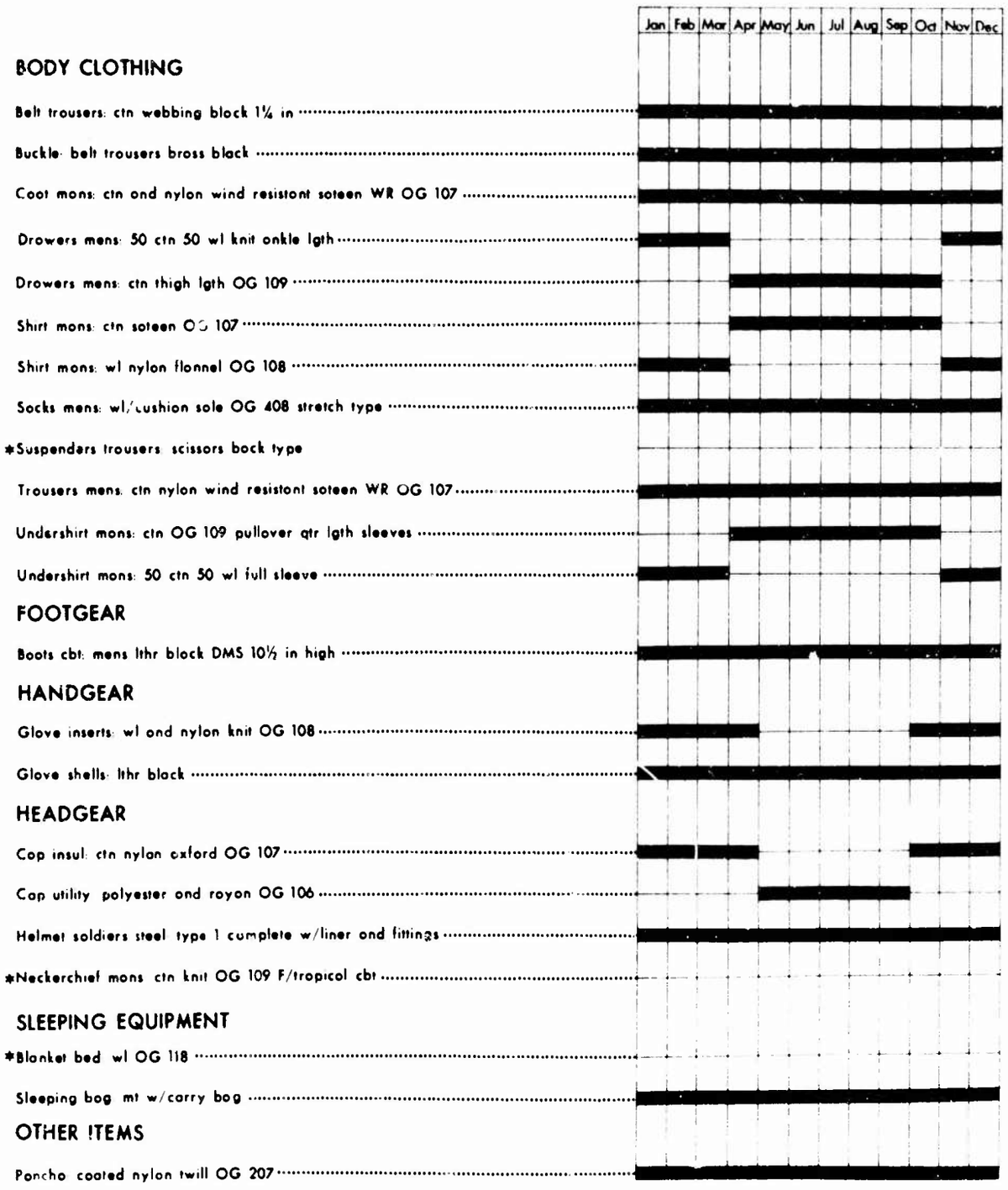
Mandatory item usually needed in this month

* Discretionary item which may be issued instead of or in addition to TA 50 902 zone item

CLOTHING REQUIREMENTS

Southwest Asia III

(Non-Mountainous Area)



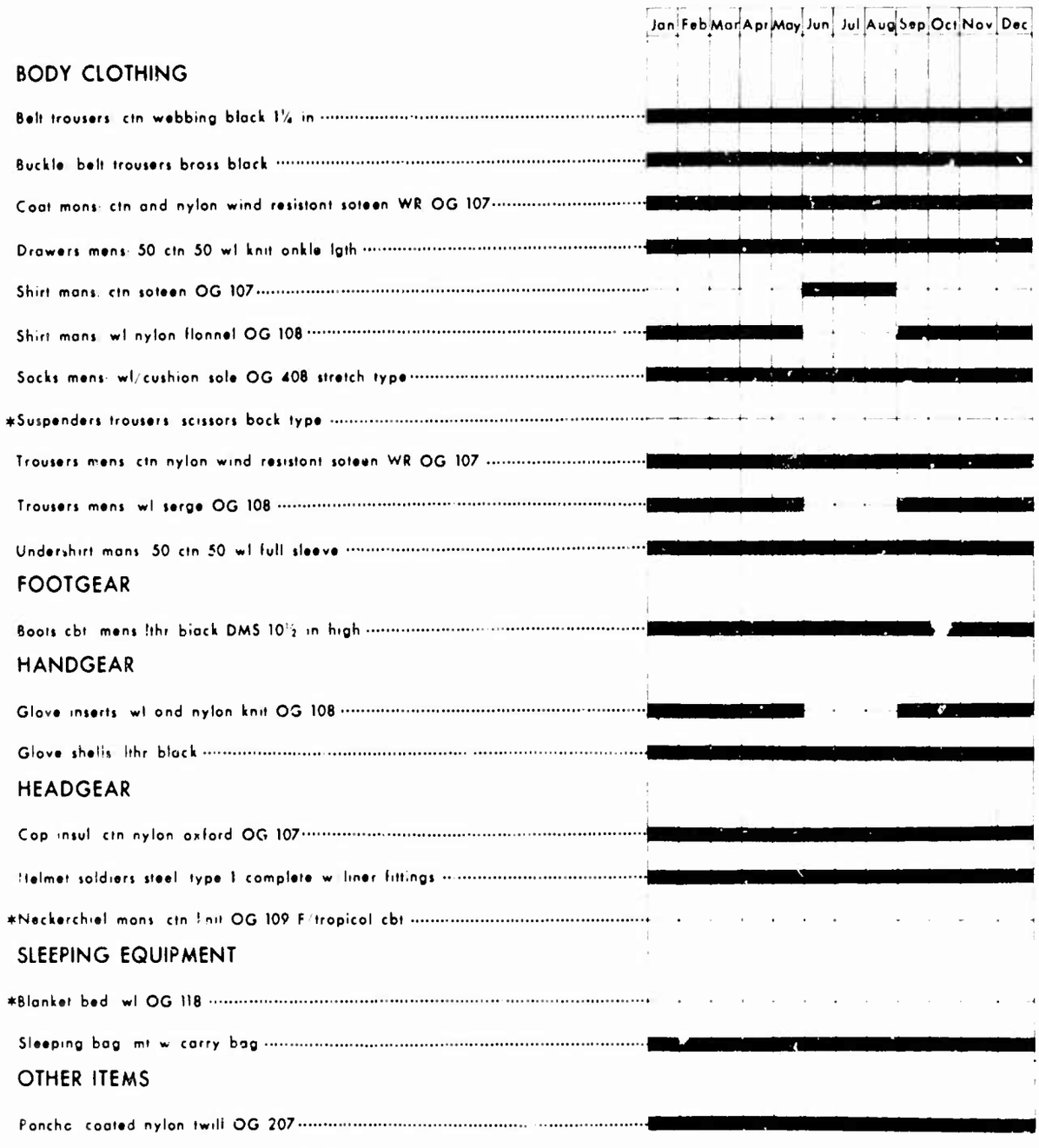
Mandatory item usually needed in this month

* Discretionary item which may be issued instead of or in addition to TA 50-902 zone item

CLOTHING REQUIREMENTS

Southwest Asia 3

(Mountainous Area Of Southwest Asia III)



Mandatory item usually needed in this month

* Discretionary item which may be issued instead of or in addition to TA 50-902 zone item

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13. ABSTRACT

This Clothing Almanac supplements TA 50-902, Clothing and Equipment (Mobilization), dated 3 April 1963. In this report monthly military clothing requirements are given for Southwest Asia, including here the countries of Turkey, Cyprus, Syria, Lebanon, Israel, Jordan, Iraq, Iran, United Arab Republic (east of the Nile River), Saudi Arabia, Yemen, South Yemen, and the Protectorates, Sultanates and Sheikdoms of the Arabian Peninsula. This region includes portions of Clothing Allowance Zones I, II, and III, which are further divided into mountainous and non-mountainous Clothing Requirement Areas. In general, Zone I comprises the southern and western perimeter of the Arabian Peninsula. Zone II comprises the rest of the Peninsula and the coastal areas of the Mediterranean Sea and Persian Gulf. Zone III includes the northern half of this region. Mountainous areas generally require the use of items listed for the next colder zone, or any additional items required for troop protection. Clothing items are grouped alphabetically in tables for each of the six areas. A map is provided to indicate the extent of each area in Southwest Asia. The Almanac includes a descriptive summary of physical features of this region, its climate, biotic conditions, and the relation of these factors to the issue of special clothing items.

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